



Science Lesson Plan

oceans and oceans of fun

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LESSON TITLE: OCEANS AND OCEANS OF FUN!

SUBJECT: Various subjects concerning the Ocean

GRADE LEVEL: 5

LESSON DURATION: One Week, entire class time

MATERIALS:

GENERAL:

- Computer Access
- Laptop projector
- Notebook paper
- pencils

ENGLISH LANGUAGE ARTS/SOCIAL STUDIES

Preselected library books for research and reference on various sailors and biologists

BIOLOGISTS CHOSEN:

- Charles Darwin
- Rachel Carson
- Robert Hooke
- [*Other famous biologists](#)

SAILORS CHOSEN:

- Bernard Moitessier
- Ellen MacArthur
- Sir Peter Blake
- [*Other famous sailors](#)

MATH/PHYSICAL EDUCATION

- Colored pencils
- Graphing paper
- Various colors of construction paper

FINE ARTS/ TECHNOLOGY APPLICATION

- Texture paint of various colors
- Colored pencils
- Large construction paper

OBJECTIVE:**SCIENCE**

KNOWLEDGE & SKILL STATEMENT

- 5.2B: Ask well-defined questions, formulate testable hypotheses, and select and use appropriate equipment and technology
- 5.2C: collect information by detailed observations and accurate measuring
- 5.2G: construct appropriate simple graphs, tables, maps, and charts using technology, including computers, to organize, examine, and evaluate information.
- 5.3C: Draw or develop a model that represents how something works or looks that cannot be seen such as how a soda dispensing machine works.
- 5.3D: Connect grade-level appropriate science concepts with the history of science, science careers, and contributions of scientists.

ORGANISMS AND ENVIRONMENTS.

- 5.9A: Observe the way organisms live and survive in their ecosystem by interacting with the living and non-living elements

ENGLISH LANGUAGE ARTS AND READING

RESEARCH

- 5.23A: Brainstorm, consult with others, decide upon a topic, and formulate open-ended questions to address the major research topic

GATHERING:

- 5.24A: Follow the research plan to collect data from a range of print and electronic resources (e.g., reference texts, periodical, web pages, online sources) and data from experts.
- ~~5.24D: Identify the source of notes (e.g., author, title, page number) and record bibliographic information concerning those sources according to a standard format~~
- 5.24E: Differentiate between paraphrasing and plagiarism and identify the importance of citing valid and reliable sources.

ORGANIZING AND PRESENTING IDEAS

- 5.26A: Compiles important information from multiple sources
- 5.26B: Develops a topic sentence, summarizes findings, and uses evidence to support conclusions
- 5.26C: Presents the findings in a consistent format

WRITING

- 5.15A Plan a first draft by selecting a genre appropriate for conveying intended meaning to an audience, determining appropriate topics through a range of strategies (e.g., discussion, background reading, personal interests, interviews), and developing a thesis or controlling idea
- 5.15B: Develop drafts by choosing an appropriate organizational strategy (e.g., sequence of events, cause-effect, compare-contrast) and building on ideas to create a focused, organized, and coherent piece of writing.
- 5.15D: Edit drafts for grammar, mechanics, and spelling
- 5.15E: Revise final draft in response to feedback from papers and teacher and publish written work for appropriate audiences

MATH

MATHEMATICAL PROCESS STANDARDS

- 5.1A Apply mathematics to problems arising in everyday life, society, and the workplace
- 5.1C: Select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems.
- 5.1E: create and use representations to organize record and communicate mathematical ideas.
- 5.7A: Solve problems by calculating conversions within a measurement system, customary or metric

DATA

- 5.9A: represent categorical data with bar graphs or frequency tables and numerical data, including data sets of measurements in fractions or decimals, with dot plots or stem-and-leaf plots

SOCIAL STUDIES

GEOGRAPHY

- 5.6A: Apply geographic tools, including grid systems, legends, symbols, scales, and compass roses, to construct and interpret maps.
- 5.6B: Translate geographic data into a variety of formats such as raw data to graphs and maps.

SOCIAL STUDIES SKILLS

- 5.24A: Differentiate between, locate, and use valid primary and secondary sources such as computer software; interviews; biographies; oral, print, and visual material; documents; and artifacts to acquire information about the United States.
- 5.24B: Analyze information by sequencing, categorizing, identifying cause and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions.
- 5.24C: Organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps.
- 5.24D: Identify different points of view about an issue, topic, or current event.
- 5.24E: Identify the historical context of an event.
- 5.25A: Use social studies terminology correctly.
- 5.25B: Incorporate main and supporting ideas in verbal and written communication.
- 5.25C: Express ideas orally based on research and experiences.
- 5.25D: Create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies.
- 5.25E: Use standard grammar spelling, sentence structure, and punctuation.
- 5.26A: Use a problem-solving process to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.

FINE ARTS

CREATIVE EXPRESSION.

- FA.A.5.2A: integrate ideas drawn from life experiences to create original works of art.
- FA.A.5.2B: create compositions using the elements of art and principles of design.
- FA.A.5.3C: produce drawings, paintings, prints, sculpture, including modeled forms, other art forms such as ceramics, fiber art, constructions, digital art and media, and photographic imagery using a variety of materials.

TECHNOLOGY APPLICATIONS**RESEARCH AND INFORMATION FLUENCY**

- 3-5.3B: collect and organize information from a variety of formats, including text, audio, video, and graphics
- 3-5.3C: Validate and evaluate the relevance and appropriateness of information
- 3-5.3D Acquire information appropriate to specific tasks.
- 3-5.4C: Evaluate student-created products through self and peer review for relevance to the assignment or task

HOOK ACTIVITY:**THE FIRST 60 MINUTES OF DAY 1:**

WE WILL WATCH A VIDEO ABOUT OCEAN CURRENTS (20 MINUTES)

[Bill Nye the Science Guy on Ocean Currents \(Oceanography\)](#)

[What causes currents in the ocean \(video\)?](#)

[How Do Ocean Currents Work \(Video\)?](#)

WE WILL WATCH A VIDEO ABOUT MIGRATION (10 MINUTES)

[Great White Shark Territory – Migration of Ocean Animals \(seals, fish and turtles\)](#)

[Whale Migration Marathon](#)

WE WILL DISCUSS VIDEO, HIGHLIGHTING ACTIVITY TOPICS

ACTIVITY:**ENGLISH LANGUAGE ARTS/SOCIAL STUDIES**

DAY 1

- Students will research their choice of famous sailors or biologist and produce their first drafts.
 - Sailors/Captains:
 - Biologists
- This research process will take a full day of various preselected books, articles, websites and videos.
- Students will rotate from station to station, reviewing the important facts about preselected biologists or sailors and choose one to write about.
 - Their assistive information will include an outline of inquiry questions to help guide their writing:
 - Who did you select?
 - Why are they famous (2 one-word details, then list facts under your one word)?
 - What scientific instruments did they used to exam their chosen profession or unique idea (list the instrument/idea and how that instrument/idea was used)?
 - What important contributions did they make for future adventurers (find at least two, if only one can be found you will need to list 5 important facts about that contribution)?
 - How has technology changed since and how do you think that technology would have helped
- Instructor will direct traffic, answer questions and guide students as they create their informative/opinionated writing
- At the end of the day students are to continue their private search of these important facts
 - Students who do not have access to computers will have approval from parents for after school research, this research team will meet in the library with teacher supervision for 1 hour

Second option is to research on computer during classroom time if arrangements for pick up cannot be made

- Vocabulary word wall will be created as students and instructor ask questions about ocean related words from videos and research items. Students will get incentive options if they include five or more words used in its correct form.

DAY 2

- Students will continue working on their writing, researching details in the same matter as day 1, starting on their final drafts
- Completing their final drafts for turn in on day 3

MATH/PHYSICAL EDUCATION (STATISTICS)

DAY 3

- Teacher will begin by collecting biographies, the
- day speaking to the class about ocean currents and fish migration separately then linking the information for understanding
- Depending on chosen writing topics, students will either group for ocean currents (if a sailor was chosen) or fish migration (if biologist was chosen) lesson
 - Students will research preselected books, websites concerning ocean currents or fish migration in various stations
 - For ocean currents
 - Each ocean currents group is responsible for researching ocean currents
 - Outline will include a place to write ocean and current names
 - Teacher will inform students it's best to list current names with the oceans they belong in.
 - For fish migration
 - Each fish migration group is responsible for the understanding of migration of 2 specific fishes (one must be a mammal) and their length of distance during migration
 - Student outline will include a place to write the 2 selected fishes, current, ocean and continent associated with migration
 - Groups are used so students can openly talk about various information and ideas
 - Students will graph the peak seasons within the year that are the busiest for migrations and the different current directions on a flow chart.
- Instructor will direct traffic, answer questions and guide students as they research and converse various ideas about group topic

DAY 4

- Students will continue their research, gathering information to create a map that includes the currents or migration
 - For ocean currents
 - Currents and oceans must be labeled on map with appropriate arrows for current flow
 - For fish migration
 - Map must include continent, picture of chosen fish (placement is up to student; they can use in legend or apply to migration direction, etc.), current direction and name
- Students will minimize the current flow and physically know how to describe the flow of the current (in their presentation for ocean currents group they can break this into sections, how it's done will be up to group leaders) to include in presentations

FINE ARTS/ TECHNOLOGY APPLICATION

DAY 5 – PRESENTATIONS AND FINE ARTS

- We will use the first part of the day for presentations
 - Students will discuss their chosen important person, highlighting the topics from their outline and include their map (5 – 7 minutes each) with physical demonstration of flow (creativity of how students do this will be acknowledged)
- Second part of the day will include either (after visual research):
 - textured picture of ocean depths and various animals that live in the environment
 - 3-D picture of an interesting aspect of the ocean (endless choices available from sailors, fishes, oceans, etc.,)

CLOSURE:

This lesson allowed students to enjoy science in content areas of math, social studies, physical education, fine arts, technology and English language arts. Students can now write, research and discuss to create original views of the ocean.

PARAGRAPH:

My main video will be *Bill Nye the Science Guy on Ocean Currents*. This video will be the main video used to introduce students to our themed ocean week. This video gives a variety of information concerning marine life and ocean currents. Before showing this video, I will begin by introducing our week's themed lesson and our objectives (permission slips for all classroom activities will be turned in the first week of school). This lesson is an integration of 5th grade subject content areas towards science. The idea is to introduce various prepared lesson plans that teach students different methods of researching and applications for future educational tasks. By the end of the school year the students will use their skills to create their own research data and present it to their class for understanding.